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Heteroconium bannaense sp. nov. and a new record of the genus from China

Ji-Wen Xia, Shou-Cai Ren, Li-Guo Ma & Xiu-Guo Zhang*

Department of Plant Pathology, Shandong Agricultural University, Taian, 271018, China
*Correspondence to: *zhxg@sdau.edu.cn, sdau613@163.com*

Abstract — Two species of the anamorphic genus *Heteroconium* were discovered from tropical forests in southern China. *Heteroconium bannaense* sp. nov. is described and illustrated based on a specimen collected on dead stems of *Phragmites communis*. *Heteroconium arundicum* is newly recorded from China.

Key words — conidial fungi, taxonomy

Introduction

Heteroconium was established by Petrak (1949) with *H. citharexyli* Petr. as the type species. The genus is characterized by distinct, single conidiophores with monoblastic, terminal, determinate or percurrently extending conidiogenous cells that produce catenate, euseptate conidia. The conidiophores are unbranched or with a secondary branch originating after conidial secession or near a percurrent proliferation (Petrak 1949, Castañeda et al. 1999, 2008, Taylor et al. 2001). The criteria used for species delimitation in *Heteroconium* are primarily based on conidial morphology and size. Castañeda et al. (2008) compared *Heteroconium* with several other similar genera, including *Cladophialophora* Borelli, *Lylea* Morgan-Jones, *Phaeoblastophora* Partr. & Morgan-Jones, *Septonema* Corda, *Taeniolella* S. Hughes, and *Xenoheteroconium* Bhat et al. To date, 24 legitimate names have been included under *Heteroconium* (MycoBank 2012, Ma et al. 2012a,b, Ren et al. 2012). However, *Heteroconium chaetospira* (Grove) M.B. Ellis, *H. solaninum* (Sacc. & P. Syd.) M.B. Ellis, and *H. tetracoilum* (Corda) M.B. Ellis have been transferred to other hyphomycete genera (Holubová-Jechová 1978, Crous et al. 2007, Hughes 2007), and *H. queenslandicum* Matsush. is considered probably to belong in the genus *Parapleurotheciopsis* P.M. Kirk (Castañeda et al. 2008). Thus, *Heteroconium* currently has 20 accepted taxa. Six species, *H. annesleae* S.C. Ren & X.G. Zhang, *H. fici* L.G. Ma & X.G. Zhang, *H. neolitseae* S.C. Ren & X.G. Zhang,

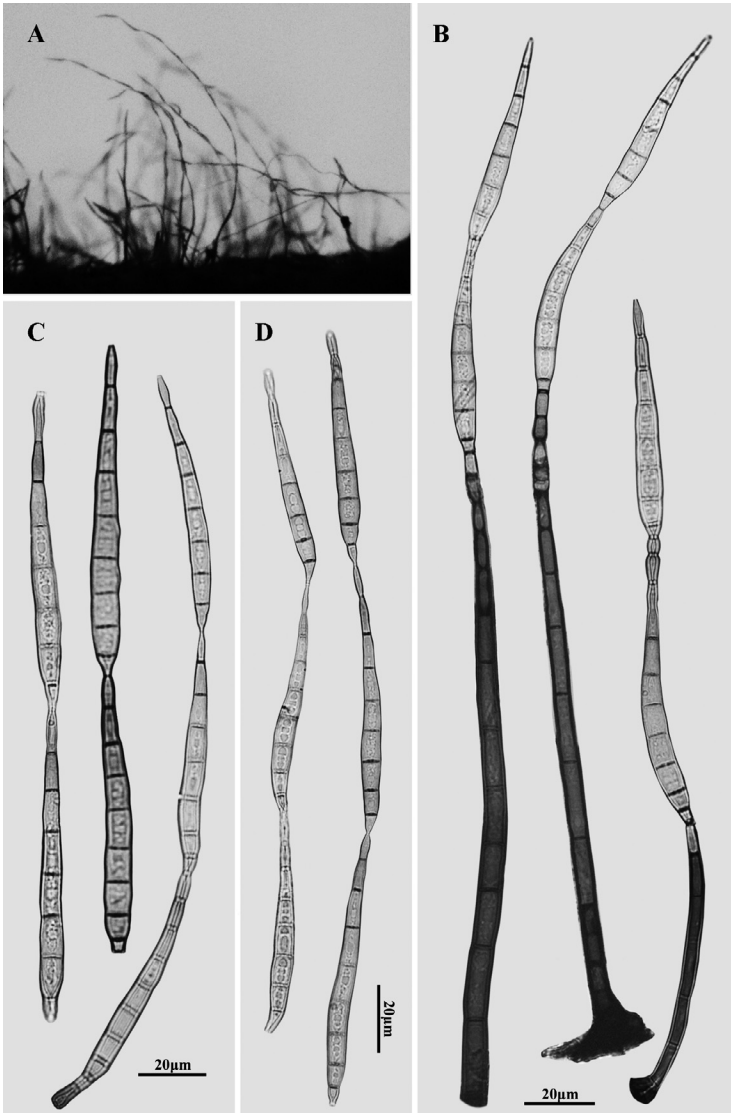

Fig. 1. *Heteroconium bannaense.*
A. Colonies on natural substratum. B. Conidiophores with conidia. C, D. Conidia.

H. phellodendri J.Ma & X.G. Zhang, *H. schimae* Y.D. Zhang & X.G. Zhang, and *H. tsoongiodendri* L.G. Ma & X.G. Zhang have been previously described from China (Zhang et al. 2010, Ma et al. 2012a,b, Ren et al. 2012).

During our ongoing survey of anamorphic fungi associated with woody debris in tropical forests of southern China, two species with morphological characteristics of genus *Heteroconium* were collected on decaying twigs and dead stems. One species is proposed herein as a new species, while the other is a new record for China.

Heteroconium bannaense J.W. Xia & X.G. Zhang, **sp. nov.** Fig. 1

MycoBank MB 801029

Differs from all other *Heteroconium* species in its typical obclavate conidia with both eusepta and distosepta.

Type: China, Yunnan Province: Xishuangbanna, on dead stems of *Phragmites communis* Trin. (*Poaceae*), 2 Nov 2011, J.W. Xia (**Holotype**, HSAUP H6035; **isotype**, HMAS 243411).

Etymology: in reference to the type locality.

Colonies on natural substrate effuse, dark brown, hairy. Mycelium partly superficial, partly immersed in the substratum, composed of septate, pale brown, smooth, 1–2 µm wide hyphae. Conidiophores macronematous, mononematous, unbranched, erect, straight or slightly flexuous, cylindrical, smooth, thick-walled, brown, 6–11-septate, 76.5–197 × 3–7 µm. Conidiogenous cells monoblastic, integrated, terminal, cylindrical, determinate or percurrent, brown, smooth, truncate at the apex, 6.5–8 × 2.5–3.5 µm. Conidial secession schizolytic. Conidia holoblastic, acrogenous, blastocatenate, in chains of up to 9, straight or slightly curved, obclavate, brown, smooth, 14–22-septate (6–8-euseptate, 8–14-distoseptate), 58–93.5 µm long, 5–8 µm wide, truncate at the base.

Comments – Among the known species, *Heteroconium bannaense* bears some resemblance in conidial shape to *H. tropicale* R.F. Castañeda & W.B. Kendr. (Castañeda & Kendrick 1990). However, the conidia of *H. bannaense* are larger than those of *H. tropicale* (conidia 26–52 × 4–6 µm, 3–6-euseptate), and have more septa. In addition, *H. bannaense* is unique within the genus in its typical obclavate conidia with both eusepta and distosepta.

Heteroconium arundicum Chowdhry, Indian Phytopath. 33: 361, 1981 ["1980"]. Fig. 2

Colonies on natural substrate effuse, brown to blackish brown, hairy. Mycelium mostly immersed in the substratum. Conidiophores macronematous, mononematous, solitary or in groups, sometimes branched, erect, straight to flexuous, cylindrical, septate, brown, smooth, up to 180 × 5.5–7.5 µm. Conidial secession schizolytic. Conidia holoblastic, acrogenous, blastocatenate, straight or slightly curved, cylindrical to fusiform, brown, smooth, 3–8-euseptate, 56–110 µm long, 7.5–11 µm wide, truncate at base.

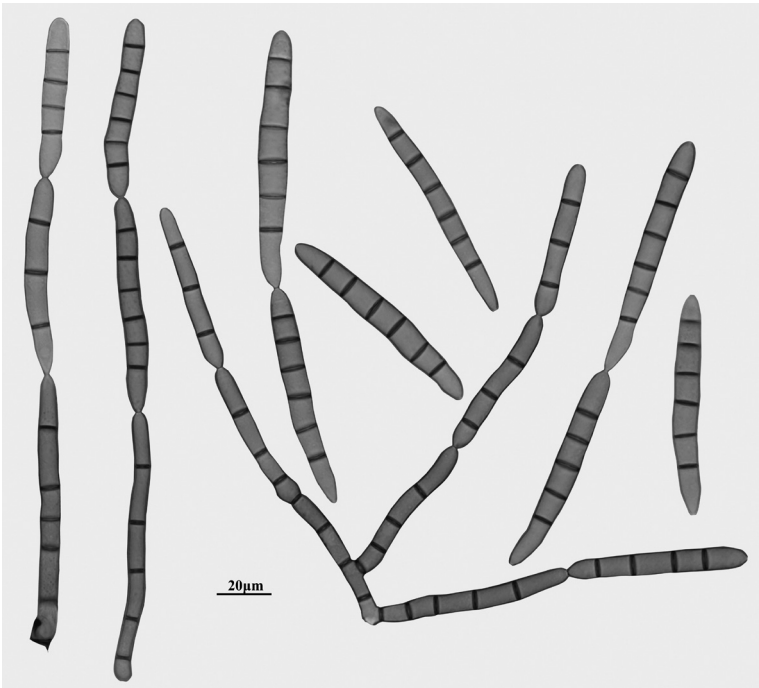

Fig. 2. *Heteroconium arundicum*.
Conidiophores and conidia.

Specimen examined: **CHINA, Hainan Province**: Lingao, on decaying twigs of unidentified broad-leaved tree, 10 April 2011, J. Ma (HSAUP H5493-2, HMAS 243412).

Comments – *Heteroconium arundicum* is reported for the first time from China. Compared with the type material described by Chowdhry (1981), the conidiophores of Chinese specimen are occasionally branched, but other features of this taxon closely match those of the original description. *Heteroconium arundicum* is similar to *H. citharexyli* (Petrak 1949) in conidial shape, but differs in having larger conidia (56–110 × 7.5–11 μm vs. 10–40 × 3–7 μm).

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